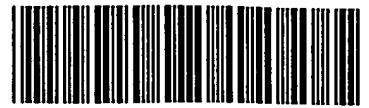# RAW SEQUENCE LISTING

The Biotechnology Systems Branch of the Scientific and Technical Information Center (STIC) no errors detected.

Application Serial Number: _____ 10/543,633 _____
Source: _____ PCT _____
Date Processed by STIC: _____ 08/08/2005 _____

ENTERED

PCT

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     4 <110> APPLICANT: Jay Grobler
     5        Osvaldo Flores
     6        Eric J. Markel
     8 <120> TITLE OF INVENTION: METHOD TO CONFER CELL CULTURE
     9        REPLICATION ACTIVITY TO DIFFERENT HEPATITIS C VIRUS ISOLATES
    12 <130> FILE REFERENCE: 21236P
C--> 14 <140> CURRENT APPLICATION NUMBER: US/10/543,633
C--> 14 <141> CURRENT FILING DATE: 2005-07-28
    14 <150> PRIOR APPLICATION NUMBER: PCT/US04/03726
    15 <151> PRIOR FILING DATE: 2004-02-09
    17 <150> PRIOR APPLICATION NUMBER: 60/447,318
    18 <151> PRIOR FILING DATE: 2003-02-13
    20 <160> NUMBER OF SEQ ID NOS: 4
    22 <170> SOFTWARE: FastSEQ for Windows Version 4.0
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    26 <212> TYPE: PRT
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    35 Cys Ile Ile Thr Ser Leu Thr Gly Arg Asp Lys Asn Gln Val Glu Gly
    36             20                  25                  30
    37 Glu Val Gln Val Val Ser Thr Ala Thr Gln Ser Phe Leu Ala Thr Cys
    38         35                  40                  45
    39 Val Asn Gly Val Cys Trp Thr Val Tyr His Gly Ala Gly Ser Lys Thr
    40     50                  55                  60
    41 Leu Ala Gly Pro Lys Gly Pro Ile Thr Gln Met Tyr Thr Asn Val Asp
    42 65              70                  75                  80
    43 Gln Asp Leu Val Gly Trp Gln Ala Pro Pro Gly Ala Arg Ser Leu Thr
    44             85                  90                  95
    45 Pro Cys Thr Cys Gly Ser Ser Asp Leu Tyr Leu Val Thr Arg His Ala
    46             100                 105                 110
    47 Asp Val Ile Pro Val Arg Arg Arg Gly Asp Ser Arg Gly Ser Leu Leu
    48             115                 120                 125
    49 Ser Pro Arg Pro Val Ser Tyr Leu Lys Gly Ser Ser Gly Gly Pro Leu
    50     130                 135                 140
    51 Leu Cys Pro Ser Gly His Ala Val Gly Ile Phe Arg Ala Ala Val Cys
    52 145             150                 155                 160
    53 Thr Arg Gly Val Ala Lys Ala Val Asp Phe Val Pro Val Glu Ser Met
    54             165                 170                 175
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RAW SEQUENCE LISTING   DATE: 08/08/2005
PATENT APPLICATION: US/10/543,633   TIME: 16:28:22

Input Set : A:\21236p.txt
Output Set: N:\CRF4\08082005\J543633.raw

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57 Ala Val Pro Gln Ser Phe Gln Val Ala His Leu His Ala Pro Thr Gly
58             195             200             205
59 Ser Gly Lys Ser Thr Lys Val Pro Ala Ala Tyr Ala Ala Gln Gly Tyr
60     210             215             220
61 Lys Val Leu Val Leu Asn Pro Ser Val Ala Ala Thr Leu Gly Phe Gly
62 225             230             235             240
63 Ala Tyr Met Ser Lys Ala His Gly Ile Asp Pro Asn Ile Arg Thr Gly
64             245             250             255
65 Val Arg Thr Ile Thr Thr Gly Ala Pro Val Thr Tyr Ser Thr Tyr Gly
66             260             265             270
67 Lys Phe Leu Ala Asp Gly Gly Cys Ser Gly Gly Ala Tyr Asp Ile Ile
68             275             280             285
69 Ile Cys Asp Glu Cys His Ser Thr Asp Ser Thr Thr Ile Leu Gly Ile
70     290             295             300
71 Gly Thr Val Leu Asp Gln Ala Glu Thr Ala Gly Ala Arg Leu Val Val
72 305             310             315             320
73 Leu Ala Thr Ala Thr Pro Pro Gly Ser Val Thr Val Pro His Pro Asn
74             325             330             335
75 Ile Glu Glu Val Ala Leu Ser Asn Thr Gly Glu Ile Pro Phe Tyr Gly
76             340             345             350
77 Lys Ala Ile Pro Ile Glu Ala Ile Arg Gly Gly Arg His Leu Ile Phe
78             355             360             365
79 Cys His Ser Lys Lys Lys Cys Asp Glu Leu Ala Ala Lys Leu Ser Gly
80     370             375             380
81 Leu Gly Ile Asn Ala Val Ala Tyr Tyr Arg Gly Leu Asp Val Ser Val
82 385             390             395             400
83 Ile Pro Thr Ile Gly Asp Val Val Val Val Ala Thr Asp Ala Leu Met
84             405             410             415
85 Thr Gly Tyr Thr Gly Asp Phe Asp Ser Val Ile Asp Cys Asn Thr Cys
86             420             425             430
87 Val Thr Gln Thr Val Asp Phe Ser Leu Asp Pro Thr Phe Thr Ile Glu
88             435             440             445
89 Thr Thr Thr Val Pro Gln Asp Ala Val Ser Arg Ser Gln Arg Arg Gly
90     450             455             460
91 Arg Thr Gly Arg Gly Arg Met Gly Ile Tyr Arg Phe Val Thr Pro Gly
92 465             470             475             480
93 Glu Arg Pro Ser Gly Met Phe Asp Ser Ser Val Leu Cys Glu Cys Tyr
94             485             490             495
95 Asp Ala Gly Cys Ala Trp Tyr Glu Leu Thr Pro Ala Glu Thr Ser Val
96             500             505             510
97 Arg Leu Arg Ala Tyr Leu Asn Thr Pro Gly Leu Pro Val Cys Gln Asp
98             515             520             525
99 His Leu Glu Phe Trp Glu Ser Val Phe Thr Gly Leu Thr His Ile Asp
100     530             535             540
101 Ala His Phe Leu Ser Gln Thr Lys Gln Ala Gly Asp Asn Phe Pro Tyr
102 545             550             555             560
103 Leu Val Ala Tyr Gln Ala Thr Val Cys Ala Arg Ala Gln Ala Pro Pro
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104                565                570                575
105 Pro Ser Trp Asp Gln Met Trp Lys Cys Leu Ile Arg Leu Lys Pro Thr
106                580              585                590
107 Leu His Gly Pro Thr Pro Leu Leu Tyr Arg Leu Gly Ala Val Gln Asn
108            595                600                605
109 Glu Val Thr Leu Thr His Pro Ile Thr Lys Tyr Ile Met Ala Cys Met
110        610                615                620
111 Ser Ala Asp Leu Glu Val Val Thr Ser Thr Trp Val Leu Val Gly Gly
112 625                630                635                640
113 Val Leu Ala Ala Leu Ala Ala Tyr Cys Leu Thr Thr Gly Ser Val Val
114                645                650                655
115 Ile Val Gly Arg Ile Ile Leu Ser Gly Arg Pro Ala Ile Val Pro Asp
116            660                665                670
117 Arg Glu Phe Leu Tyr Gln Glu Phe Asp Glu Met Glu Glu Cys Ala Ser
118            675                680                685
119 His Leu Pro Tyr Ile Glu Gln Gly Met Gln Leu Ala Glu Gln Phe Lys
120        690                695                700
121 Gln Lys Ala Leu Gly Leu Leu Gln Thr Ala Thr Lys Gln Ala Glu Ala
122 705                710                715                720
123 Ala Ala Pro Val Val Glu Ser Lys Trp Arg Ala Leu Glu Thr Phe Trp
124                725                730                735
125 Ala Lys His Met Trp Asn Phe Ile Ser Gly Ile Gln Tyr Leu Ala Gly
126            740                745                750
127 Leu Ser Thr Leu Pro Gly Asn Pro Ala Ile Ala Ser Leu Met Ala Phe
128            755                760                765
129 Thr Ala Ser Ile Thr Ser Pro Leu Thr Thr Gln Ser Thr Leu Leu Phe
130        770                775                780
131 Asn Ile Leu Gly Gly Trp Val Ala Ala Gln Leu Ala Pro Pro Ser Ala
132 785                790                795                800
133 Ala Ser Ala Phe Val Gly Ala Gly Ile Ala Gly Ala Ala Val Gly Ser
134                805                810                815
135 Ile Gly Leu Gly Lys Val Leu Val Asp Ile Leu Ala Gly Tyr Gly Ala
136            820                825                830
137 Gly Val Ala Gly Ala Leu Val Ala Phe Lys Val Met Ser Gly Glu Met
138            835                840                845
139 Pro Ser Thr Glu Asp Leu Val Asn Leu Leu Pro Ala Ile Leu Ser Pro
140     850                855                860
141 Gly Ala Leu Val Val Gly Val Val Cys Ala Ala Ile Leu Arg Arg His
142 865                870                875                880
143 Val Gly Pro Gly Glu Gly Ala Val Gln Trp Met Asn Arg Leu Ile Ala
144            885                890                895
145 Phe Ala Ser Arg Gly Asn His Val Ser Pro Thr His Tyr Val Pro Glu
146            900                905                910
147 Ser Asp Ala Ala Ala Arg Val Thr Gln Ile Leu Ser Ser Leu Thr Ile
148        915                920                925
149 Thr Gln Leu Leu Lys Arg Leu His Gln Trp Ile Asn Glu Asp Cys Ser
150        930                935                940
151 Thr Pro Cys Ser Gly Ser Trp Leu Arg Asp Val Trp Asp Trp Ile Cys
152 945                950                955                960
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153 Thr Val Leu Thr Asp Phe Lys Thr Trp Leu Gln Ser Lys Leu Leu Pro
154                 965             970             975
155 Gln Leu Pro Gly Val Pro Phe Phe Ser Cys Gln Arg Gly Tyr Lys Gly
156             980             985             990
157 Val Trp Arg Gly Asp Gly Ile Met Gln Thr Thr Cys Pro Cys Gly Ala
158         995             1000            1005
159 Gln Ile Thr Gly His Val Lys Asn Gly Ser Met Arg Ile Val Gly Pro
160     1010            1015            1020
161 Lys Thr Cys Ser Asn Thr Trp His Gly Thr Phe Pro Ile Asn Ala Tyr
162 1025            . 1030            1035                    1040
163 Thr Thr Gly Pro Cys Thr Pro Ser Pro Ala Pro Asn Tyr Ser Arg Ala
164             1045            1050            1055
165 Leu Trp Arg Val Ala Ala Glu Glu Tyr Val Glu Val Thr Arg Val Gly
166             1060            1065            1070
167 Asp Phe His Tyr Val Thr Gly Met Thr Thr Asp Asn Val Lys Cys Pro
168         1075            1080            1085
169 Cys Gln Val Pro Ala Pro Glu Phe Phe Thr Glu Val Asp Gly Val Arg
170     1090            1095            1100
171 Leu His Arg Tyr Ala Pro Ala Cys Arg Pro Leu Leu Arg Glu Glu Val
172 1105            1110            1115                    1120
173 Thr Phe Gln Val Gly Leu Asn Gln Tyr Leu Val Gly Ser Gln Leu Pro
174             1125            1130            1135
175 Cys Glu Pro Glu Pro Asp Val Ala Val Leu Thr Ser Met Leu Thr Asp
176             1140            1145            1150
177 Pro Ser His Ile Thr Ala Glu Thr Ala Lys Arg Arg Leu Ala Arg Gly
178         1155            1160            1165
179 Ser Pro Pro Ser Leu Ala Ser Ser Ser Ala Ile Gln Leu Ser Ala Pro
180     1170            1175            1180
181 Ser Leu Lys Ala Thr Cys Thr Thr His His Val Ser Pro Asp Ala Asp
182 1185            1190            1195                    1200
183 Leu Ile Glu Ala Asn Leu Leu Trp Arg Gln Glu Met Gly Gly Asn Ile
184             1205            1210            1215
185 Thr Arg Val Glu Ser Glu Asn Lys Val Val Val Leu Asp Ser Phe Asp
186             1220            1225            1230
187 Pro Leu Arg Ala Glu Glu Asp Glu Arg Glu Val Ser Val Pro Ala Glu
188         1235            1240            1245
189 Ile Leu Arg Lys Ser Lys Lys Phe Pro Ala Ala Met Pro Ile Trp Ala
190     1250            1255            1260
191 Arg Pro Asp Tyr Asn Pro Pro Leu Leu Glu Ser Trp Lys Asp Pro Asp
192 1265            1270            1275                    1280
193 Tyr Val Pro Pro Val Val His Gly Cys Pro Leu Pro Pro Ile Lys Ala
194             1285            1290            1295
195 Pro Pro Ile Pro Pro Pro Arg Arg Lys Arg Thr Val Val Leu Thr Glu
196             1300            1305            1310
197 Ser Ser Val Ser Ser Ala Leu Ala Glu Leu Ala Thr Lys Thr Phe Gly
198         1315            1320            1325
199 Ser Ser Glu Ser Ser Ala Val Asp Ser Gly Thr Ala Thr Ala Leu Pro
200     1330            1335            1340
201 Asp Gln Ala Ser Asp Asp Gly Asp Lys Gly Ser Asp Val Glu Ser Tyr
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202 1345                1350                1355                1360
203 Ser Ser Met Pro Pro Leu Glu Gly Glu Pro Gly Asp Pro Asp Leu Ser
204                1365                1370                1375
205 Asp Gly Ser Trp Ser Thr Val Ser Glu Glu Ala Ser Glu Asp Val Val
206                1380                1385                1390
207 Cys Cys Ser Met Ser Tyr Thr Trp Thr Gly Ala Leu Ile Thr Pro Cys
208           1395                1400                1405
209 Ala Ala Glu Glu Ser Lys Leu Pro Ile Asn Ala Leu Ser Asn Ser Leu
210      1410                1415                1420
211 Leu Arg His His Asn Met Val Tyr Ala Thr Thr Ser Arg Ser Ala Gly
212 1425                1430                1435                1440
213 Leu Arg Gln Lys Lys Val Thr Phe Asp Arg Leu Gln Val Leu Asp Asp
214                1445                1450                1455
215 His Tyr Arg Asp Val Leu Lys Glu Met Lys Ala Lys Ala Ser Thr Val
216                1460                1465                1470
217 Lys Ala Lys Leu Leu Ser Val Glu Glu Ala Cys Lys Leu Thr Pro Pro
218           1475                1480                1485
219 His Ser Ala Lys Ser Lys Phe Gly Tyr Gly Ala Lys Asp Val Arg Asn
220      1490                1495                1500
221 Leu Ser Ser Lys Ala Val Asn His Ile His Ser Val Trp Lys Asp Leu
222 1505                1510                1515                1520
223 Leu Glu Asp Thr Val Thr Pro Ile Asp Thr Thr Ile Met Ala Lys Asn
224                1525                1530                1535
225 Glu Val Phe Cys Val Gln Pro Glu Lys Gly Gly Arg Lys Pro Ala Arg
226           1540                1545                1550
227 Leu Ile Val Phe Pro Asp Leu Gly Val Arg Val Cys Glu Lys Met Ala
228           1555                1560                1565
229 Leu Tyr Asp Val Val Ser Thr Leu Pro Gln Val Val Met Gly Ser Ser
230      1570                1575                1580
231 Tyr Gly Phe Gln Tyr Ser Pro Gly Gln Arg Val Glu Phe Leu Val Asn
232 1585                1590                1595                1600
233 Thr Trp Lys Ser Lys Lys Asn Pro Met Gly Phe Ser Tyr Asp Thr Arg
234                1605                1610                1615
235 Cys Phe Asp Ser Thr Val Thr Glu Asn Asp Ile Arg Val Glu Glu Ser
236           1620                1625                1630
237 Ile Tyr Gln Cys Cys Asp Leu Ala Pro Glu Ala Arg Gln Ala Ile Lys
238           1635                1640                1645
239 Ser Leu Thr Glu Arg Leu Tyr Ile Gly Gly Pro Leu Thr Asn Ser Lys
240      1650                1655                1660
241 Gly Gln Asn Cys Gly Tyr Arg Arg Cys Arg Ala Ser Gly Val Leu Thr
242 1665                1670                1675                1680
243 Thr Ser Cys Gly Asn Thr Leu Thr Cys Tyr Leu Lys Ala Ser Ala Ala
244                1685                1690                1695
245 Cys Arg Ala Ala Lys Leu Gln Asp Cys Thr Met Leu Val Asn Gly Asp
246           1700                1705                1710
247 Asp Leu Val Val Ile Cys Glu Ser Ala Gly Thr Gln Glu Asp Ala Ala
248           1715                1720                1725
249 Ser Leu Arg Val Phe Thr Glu Ala Met Thr Arg Tyr Ser Ala Pro Pro
250      1730                1735                1740
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VERIFICATION SUMMARY   DATE: 08/08/2005
PATENT APPLICATION: **US/10/543,633**   TIME: 16:28:23

Input Set : **A:\21236p.txt**
Output Set: **N:\CRF4\08082005\J543633.raw**

L:14 M:270 C: Current Application Number differs, Replaced Current Application No
L:14 M:271 C: Current Filing Date differs, Replaced Current Filing Date